METHODS FOR THE PREPARATION OF NUCLEIC ACID AND POLYPEPTIDE LIBRARIES AND USES THEREOF

Abstract

This invention provides novel methods of generating large, highly diverse, nucleic acid (and hence polypeptide) libraries. The methods exploit the discovery that recombination, particularly recombinase recombination can occur between two or more constructs of the same type (*e.g.* having the same origin of replication and/or the same regulatory or selectable markers). The methods thus involve introducing at least two members of an initial population of nucleic acid molecules into at least one cell under conditions were recombination (*e.g.* recombinase mediated recombination) can occur between the nucleic acids. The nucleic acid molecules preferably comprise two or more individual nucleic acids each of which consists of a nucleic acid sequence that is identical for each molecule and that includes an origin of replication; and a nucleic acid sequence that varies between members of said population. Thus, a single type of construct is capable of mediates all of the recombination events providing substantially greater efficiency and the creation of substantially larger and more diverse nucleic acid libraries.